Space Weather Forecast

Issued on Sunday, 11 September 2022 at 13:18 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of Moderate class flares. Possible minor geomagnetic activity midweek.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has remained Low over the past 24 hours, with occasional low-end common class flares. These flares peaked at 11/1033 UTC from AR3098. This was one of seven sunspot groups on the disc in the period, AR3098 and two others notable moderately complex spots. The remaining four spots were small, simple or in decay.

There remain many large filaments scattered across the solar disc, though no recent lift-offs are thought to have been earth directed. Therefore, no new Earth directed Coronal Mass Ejections have been confirmed.

Solar Wind / Geomagnetic Activity: The solar wind, was at slightly elevated levels. The interplanetary magnetic field, was weak, fluctuating between weakly positive and negative. The net result of the above solar wind measures was Quiet to Unsettled (Kp 2-3).

Energetic Particles / Solar Radiation: While there were no solar radiation storms, the recorded level was slightly above its characteristic background trace.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be Low, but with a Chance of rising to Moderate with isolated M-class flares from either of the three moderately sized/complex spots currently on the disk, or as a result of the potential returning region, currently near the southeastern limb.

Solar Wind / Geomagnetic Activity: The geomagnetic forecast carries low confidence. The tail of CH24/+ may give a Slight Chance of Active intervals at first, soon fading to leave mainly Quiet conditions into the start of the new working week. Confidence falls further from later Tuesday 13 September, whereupon there is a risk of CH22/- and the 09 September CME arriving, with both more likely midweek.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	5	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	25	30	30	30
Very Active	R3 to R5 X	No	2	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	2	2	2
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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